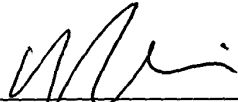


No fee is believed to be due for filing of this amendment. However, should the Commissioner determine otherwise, he is hereby authorized to charge any fees associated with filing this Amendment to Pennie & Edmonds Deposit Account No. 16-1150.


A copy of this sheet is enclosed.

Respectfully submitted,

Date: January 5, 2001



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APPENDIX A

1. A chimeric peptide-nucleic acid fragment capable of entering a cellular compartment, comprising:

- (a) a compartment-specific signal peptide;
- (b) a linkage agent; and
- (c) a nucleic acid which is capable of entering a cellular pore;

wherein the linkage agent links an amino acid at the carboxy-terminal end of the signal peptide to the nucleic acid and wherein the signal peptide is specific to a compartment selected from the group consisting of mitochondria and chloroplasts.

25. A chimeric peptide-nucleic acid fragment in the form of a linear-cyclic molecule, wherein the molecule comprises at least one replication origin and both ends of the nucleic acid portion are cyclized, and wherein at least one cyclic end comprises a modified nucleotide which via a linkage agent can be linked with a signal peptide specific to a compartment selected from the group consisting of mitochondria and chloroplasts.

82. A method of introducing a nucleic acid with a functional linkage group into a compartment of a cell, comprising the steps:

- (a) reaction of the nucleic acid with a linkage agent;
- (b) reaction of the construct of step (a) with amino acids at the carboxy-terminal end of a peptide containing a signal sequence, with the exception of a KDEL signal sequence, to form a chimeric peptide-nucleic acid fragment; and
- (c) contacting the chimeric peptide-nucleic acid fragment of step (b) with the cell;

wherein the signal sequence of the peptide is specific to a cell compartment selected from the group consisting of mitochondria and chloroplasts.